



A.D. 1728 N° 505.

SPECIFICATION

JOHN PAYNE.

**MACHINERY FOR OBTAINING MOTIVE
POWER BY VENTILATION OF HOT-
HOUSES, &c.; FURNACES, COPPERS,
BOILERS, &c.; MANUFACTURE OF SALT
AND IRON.**

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,
NEAR FLEET STREET.

Price 4d.

1854.



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**Machinery for Obtaining Motive Power by Ventilation
of Hothouses, &c.; Furnaces, Coppers, Boilers, &c.;
Manufacture of Salt and Iron.**

PAYNE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, JOHN PAYNE,
of Bridgewater, in the County of Somerset, sendeth greeting,

WHEREAS His most Sacred Majesty King George the Second, by the
grace of God of Great Brittain, France, and Ireland, by His Letters Patents,
5 bearing date att Westminster, the Twenty-first day of November, in the second
year of His raigne, reciting that the said John Payne hath by his petition
humbly represented to His Majesty that he had discovered “**A NEW ENGINE,**
TO BE MOVED BY PRESSURE OF THE AIR INTO ANY BUILDING WHERE LARGE FIRES ARE
MADE USE OF, AS IN GLASS-HOUSES, OR ANY OTHER BUILDINGS FOR LARGE WORKS, WHERE
10 **BY THOSE FIRES THE AIR IS RARIFIED OR THE ELASTICITY THEREOF WITHIN THE**
BUILDING IS IN A GREAT MEASURE DESTROYED, WHICH OCCASIONS A PRESSURE OF AIR
FROM WITHOUT THROUGH AN AVENUE INTO THE BUILDING OF SUFFICIENT FORCE TO TURN
OR DRIVE A WHEEL, SOMETHING LIKE A LARGE WATER WHEEL, THAT WILL GRIND CORN,
MOVE LARGE HAMMERS, RAISE WATER, OR PERFORME ANY OTHER WORKE THAT IS DONE
15 **BY THE FORCE OF WIND, WATER, OR HORSES, &c.;**” that the said John Payne had
also discovered “**A NEW AND MORE ADVANTAGEOUS METHOD OF APPLYING THE HEAT**
OF FIRE MADE OF PIT COAL, WOOD, OR TURFE TO A MUCH GREATER ADVANTAGE THAN
HAS BEEN HITHERTO PRACTICED IN ANY OF THE WORKS OF GREAT BRITAIN, BY
EXTENDING THE HEAT OF ONE AND THE SAME FIRE TO TWO, THREE, OR MORE FURNACES,
20 **COPPERS, BOILERS, STILLs, OR OTHER VESSELLS, FOR THE MELTING OF ALL SORTS OF**
METALLS OR METALLINE ORE, AND ALSOE THE DRYING OF MALT AND MEAL, BREWING

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OR DISTILLING, AND LIKEWISE IN REFINING OF SALT FROM SALT ROCK, OR MAKING THE SAME FROM BRINE OR SEA WATER, BY A NEW METHOD OF MAKING AND PLACING THE PANS, (WHICH MAY BE OF METALL OR WOOD,) SOE THAT THE SAME QUANTITY OF SALT MAY BE MADE MUCH CHEAPER THAN CAN BE DONE BY THE COMON METHODS; AND FURTHER THE FIRE OF FURNACES MAY BE APPLIED TO VITRIFYING THE SCORIA OR DROSS OF 5 DIVERS METTALLS AND ORES, SO AS TO SHAPE OR MOULD THE SAME LIKE BRICKS OR TILES, OR INTO OTHER FORMS, FIT FOR CONVENIENCES AND ORNAMENTS IN BUILDING;” that the said John Payne had likewise discovered “A METHOD BY WHICH PIG OR SOW IRON BEING PUT INTO FUSION WITH DIVERS INGREDIENTS WILL BE BROUGHT INTO A STATE OF MALLEABILITY, AND SO DRAWN INTO BARRS BY THE COMON VSE OF THE FORGE 10 HAMMER;” that as the said Inventions are intirely new, and will be of great benefitt and advantage to the publick, the said John Payne did most humbly pray that in consideration of the labour and expence he had been at in making the said discoveries, His Maiesty would be graciously pleased to grant him His Royall Letters Patent for the sole vse and benefitt of his said Inventions, 15 within England, Wales, and Town of Barwick vpon Tweed for fourteen years, according to the Statute in that case made and provided: His said Maiesty, of His especiall grace, certain knowledge, and meer motion, did, for Himselfe, His heires, and successors, give and grant vnto the said John Payne, his executors, administrators, and assignes, especiall licence, full power, sole 20 priviledge, and authority, that he, the said John Payne, his executors, administrators, & assignes, and every of them, by himselfe and themselves, or by his and their deputy & deputies, servants or agents, or such others as he, the said John Payne, his executors, administrators, or assignes, should att any time agree with, and no others, from time to time and att all times here- 25 after, during the terme of years in the said Letters Patent expressed, shall and lawfully may make, exercise, work, use, and enioy, within that part of Great Brittain called England, the Dominion of Wales, and Towne of Barwick vpon Tweed, his said severall and respective Inventions therein sett forth and described, in such manner as to him, the said John Payne, his 30 executors, administrators, or assigns, or any of them, should in their discretions seem meet, and that he, the said John Payne, his executors, administrators, and assigns, shall and lawfully may have and enioy the whole proffitt, benefitt, comodity, and advantage from time to time coming, growing, accrewing, and arising by reason of the said Inventions for and during the term of years 35 therein mentioned, to have, hold, exercise, and enioy the said licence, powers, priviledges, & advantages therein-before granted or mentioned to be granted to the said John Payne, his executors, administrators, and assignes, for and during and vnto the full end and term of fourteen years from the date of

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the said Letters Patent next & immediately ensuing, fully to be compleat and ended according to the Statute in that case made and provided; and whereas amongst divers other clauses and provisoes there is a clause or condition in the said Letters Patent, that the same are to be void if the said
 5 John Payne shall not inroll or cause to be inrolled in the High Court of Chancery a particular description of the species of the ingredients vsed by him to render pig or sow iron malleable as aforesaid, within one calendar moneth from the date of the said Letters Patents; all which by the said Letters Patent, relation being thereunto had, may more fully and att large
 10 appear.

NOW KNOW YEE, that in pursuance and performance of the said clause or condition in the said Letters Patent, I, the said John Payne doe hereby declare that the following account is an exact and particular description of the nature and method of my said Invention, (that is to say,) the method of
 15 putting certain ingredients into fusion with pig or sow iron, which are as follows, videlicet:—

The ashes of wood and other vegetables, all kinds of glass and sandever, comon salt and rock salt, argile kelp, and pot ash, slegg or cinders from iron furnaces and forges, proportionable parts of the said ingredients being put into
 20 fusion or melted with pig, sow, or other brittle iron, will make the like change as charcoal does in the fire called the finery in the comon forges, and will render the same into a state of malleability as to bear the stroke of the hammer to draw it into barrs or other forms, att the pleasure of the workman, and those or other barrs being heated in the said melted ingredients in a long hott arch or
 25 cavern as hereafter is described, and those or other barrs are to pass between two large mettall rowlers, (which have proper notches or furrows on their surfass,) by the force of my engine hereafter described, or any other power, into such shapes and forms as shall be required. The form of my engine above-mentioned is made in manner following, videlicet:—A large wheel fixed to an
 30 axeltree is hung in a frame on the outside of the building, so that the wheel will be in a perpendicular or other position, and on the extreme or outer parts of the said wheel is to be placed fanes or padles of a proportionable length and breadth to the bigness of the wheel and avenue through which the air is to pass into the building or case, for that purpose to direct the air in a right
 35 course, so as it may have the greatest force on the extreme or outer part of the wheel and padles, which will give the same a very strong circular motion, sufficient to move other machinery works, for the purposes mentioned in the said Letters Patent; my new method of applying the heat of fire above mentioned is as followeth, viz^t, by building or erecting a place for the fire at the

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end of an arched cavern, which encloses and confines the fiery particles of burning fuell and heated air that passes through and from the fire and fire-place or grate into a contiguous arch or cavern, of such suitable dimensions as will contain the matter there to be melted or heated, from which arch or cavern the said heat or fire is directed and extended through a small flew or 5 flew, channell or channells, built of a proportionable bigness to cause a sufficient draft of air to the fire, and then to pass and be extended into another arch, space, or cavern, built of another forme and suitable size to heat or boil salt water or other liquors or fluids over it, and att the same time to contain or have space to contain any matter of earth, mettalls, or mineralls, there to be 10 heated, melted, or fused; and then the heat to be continued or extended through another flew or flew, channell or channells, into a third arch or cavern, of such size, shape, or form as to contain or have space to contain, heat, melt, or fuse such matter as shall be placed therein or over the same for that purpose, and so continue extending the heat to a fourth, fifth, or sixth arch or cavern, 15 and so on to any number and to any length or breadth the nature of the work may require for the purposes mentioned in the said Letters Patents. And also my new method of making salt as above mentioned is as followeth, videlicet:—

The boylers, vessells, or pans to be made of such size and form as will be suitable to the place and work where they will be made vse of, and to place them 20 over such arches or caverns as above described, within a building erected for that purpose, in which will be partition walls, and also small caverns from the arches above mentioned, through which the heat will pass to the topp of the partition walls, which will warm the air in the rooms and give a greater velocity to the aqueous evaporating particles to ascend out at the top of the 25 building; then by placing large grained or other sand or gravell on iron or other mettalline plates, stone, or brick, like a pavement over one or more of the heated arches above described, and by continually wetting the sand with sea or other salt water, which by the heat of the sand will evaporate the watery particles and leave the salt vpon the sand, then that salt may be dissolved from 30 the sand by other salt or fresh water into a strong brine, which may be made into salt in the manner hereafter mentioned, videlicet, by placing the pans in such manner as to convey the brine or salt water from pan to pan by a pipe or channell at any time as the workman shall think fitt, so that the salt may kern or granulate in the last receiving pan or pans, at the same time that 35 more water will be boiling in the first, second, or other pans, and to that degree of saltness as to be continually supplying the last receiving pan or pans for granulating or kerning into salt, and when any sort of brine shall be prepared by the sun or otherwise to a great degree of saltness, at such time all

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the pans may be imployed to granulate or kern the salt, which may be in number ten, twenty, thirty, or more, as effectually as in the comon method now used in making of salt. Lastly, my method of moulding or shaping the scoria or dross of divers mettalls and ores by fusing or melting, as before specified, with such mixtures as will in a great measure prevent its being brittle, and also gives it divers colours, so as to make it the more ornamentall and vsefull where other durable and ponderous vitrified matter is wanting, which scoria or dross, when prepared, is to be placed into moulds and pressed down by a screw or weight, soe as to fill the moulds to the proper shape designed for it.

10 In witness whereof, I, the said John Payne, have hereunto set my hand and seal, this Nineteenth day of December, in the second yeare of the raigne of our Sovereigne Lord George the Second, by the grace of God King of Great Brittain, France, and Ireland, Defender of the Faith, and in the year of our Lord One thousand seven hundred and twenty-
15 eight.

(JOHN PAYNE.)

Sealed and delivered, being first duely stamped, in the presence of

JOHN PITT,
CARLETON HAYWARD.

20 Et memorandum quod predicto decimo nono die Decembris pred̃ Joñes Payne venit coram dicto Domino Rege in Cancellaria Sua et recognovit scriptum predictum ac om̃ia et singula in eadem conteñt et sp̃ificat̃ in forma pred̃ca. Necnon script̃ pred̃ impress̃ fuit secundum tenorem Satũ fact̃ anno
25 regni Gulielmi et Marie nuper Regis et Regine Anglie, &c. sexto.

Ir̃ predicto xix^o die Decembris.

BURROUGHS.

LONDON:

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1854.

